

Application No. 10/672,231
Confirmation No.: 8714
Notice of Allowance Dated: February 25, 2005

Docket No. 0720-4148

AMENDMENTS TO THE CLAIMS

Claims 1-32 have been allowed. Please amend claims 10 and 18 as shown in the following listing of claims which also includes (but does not show by way of markings) the changes to claims 10, 18, and 32 as specified by the Examiner's Amendment attached to the Notice of Allowability.

This listing of claims will replace all prior versions and listings of claims in the application:

Listing of Claims:

1. (Original) An overvoltage and overcurrent protection system, comprising:

a first overvoltage and overcurrent protection circuit, comprising:

a first gas discharge tube including a first electrode, a second electrode and a third electrode, the third electrode connected to a ground;

a first positive temperature coefficient resistor (PTCR) connected in series with the first electrode of the first gas discharge tube;

a first capacitor connected in parallel with the first PTCR;

a second PTCR connected in series with the second electrode of the first gas discharge tube;

a second capacitor connected in parallel with the second PTCR;

a first diode bridge connected in series with the first and second capacitors; and

a first avalanche diode connected across the first diode bridge.

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2. (Original) The overvoltage and overcurrent protection system of claim 1, wherein the first diode bridge includes a first diode, a second diode, a third diode, a fourth diode, a fifth diode, and a sixth diode.

3. (Original) The overvoltage and overcurrent protection system of claim 1, further comprising:

a second avalanche diode connected in series with the first avalanche diode across the first diode bridge.

4. (Original) The overvoltage and overcurrent protection system of claim 1, further comprising:

a terminal for receiving incoming signals from an input source.

5. (Original) The overvoltage and overcurrent protection system of claim 4, wherein the terminal is configured to connect to one of a twisted pair of wires or a coaxial cable.

6. (Original) The overvoltage and overcurrent protection system of claim 1, further comprising:

a terminal for transmitting incoming signals to an output source.

7. (Original) The overvoltage and overcurrent protection system of claim 6, wherein the terminal is configured to connect to one of a twisted pair of wires or a coaxial cable.

8. (Original) The overvoltage and overcurrent protection system of claim 1, further comprising:

a second overvoltage and overcurrent protection circuit, comprising:

a second gas discharge tube including a fourth electrode, a fifth electrode and a sixth electrode, the sixth electrode connected to the ground;

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a third PTCR connected in series with the fourth electrode of the second gas discharge tube;

a third capacitor connected in parallel with the third PTCR;

a fourth PTCR connected in series with the fifth electrode of the second gas discharge tube;

a fourth capacitor connected in parallel with the fourth PTCR;

a second diode bridge connected in series with the third capacitor and the fourth capacitor; and

a third avalanche diode connected across the second diode bridge.

9. (Original) The overvoltage and overcurrent protection system of claim 8, wherein the second diode bridge includes a seventh diode, an eighth diode, a ninth diode, a tenth diode, an eleventh diode, and a twelfth diode.

10. (Currently Amended) The overvoltage and overcurrent protection circuit of claim 8, further comprising:

a fourth avalanche diode connected in series with the third avalanche diode across the second diode bridge.

11. (Original) The overvoltage and overcurrent protection system of claim 8, further comprising:

a terminal for receiving outgoing signals from an input source.

12. (Original) The overvoltage and overcurrent protection system of claim 11, wherein the terminal is configured to connect to one of a twisted pair of wires or a coaxial cable.

13. (Original) The overvoltage and overcurrent protection system of claim 8, further comprising:

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a terminal for transmitting outgoing signals to an output source.

14. (Original) The overvoltage and overcurrent protection system of claim 13, wherein the terminal is configured to connect to one of a twisted pair of wires or a coaxial cable.

15. (Original) An overvoltage and overcurrent protection system, comprising:

a first overvoltage and overcurrent protection circuit, comprising:

a first gas discharge tube including a first electrode, a second electrode and a third electrode, the third electrode connected to a ground;

a first transient blocking unit (TBU) connected in series with the first electrode of the first gas discharge tube;

a first capacitor connected in parallel with the first TBU;

a second TBU connected in series with the second electrode of the first gas discharge tube;

a second capacitor connected in parallel with the second TBU;

a first diode bridge connected in series with the first and second capacitors; and

a first avalanche diode connected across the first diode bridge.

16. (Original) The overvoltage and overcurrent protection system of claim 15, further comprising:

a second avalanche diode connected in series with the first avalanche diode across the first diode bridge.

17. (Original) The overvoltage and overcurrent protection system of claim 15, further comprising:

a second overvoltage and overcurrent protection circuit, comprising:

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a second gas discharge tube including a fourth electrode, a fifth electrode and a sixth electrode, the sixth electrode connected to the ground;

a third TBU connected in series with the fourth electrode of the second gas discharge tube;

a third capacitor connected in parallel with the third TBU;

a fourth TBU connected in series with the fifth electrode of the second gas discharge tube;

a fourth capacitor connected in parallel with the fourth TBU;

a second diode bridge connected in series with the third capacitor and the fourth capacitor; and

a third avalanche diode connected across the second diode bridge.

18. (Currently Amended) The overvoltage and overcurrent protection circuit of claim 17, further comprising:

a fourth avalanche diode connected in series with the third avalanche diode across the second diode bridge.

19. (Original) An overvoltage and overcurrent protection system, comprising:

a first overvoltage and overcurrent protection circuit, comprising:

a first gas discharge tube including a first electrode, a second electrode and a third electrode, the third electrode connected to a ground;

a first PTCR connected in series with the first electrode of the first gas discharge tube;

a first capacitor connected in parallel with the first PTCR;

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a second PTCR connected in series with the second electrode of the first gas discharge tube;

a second capacitor connected in parallel with the second PTCR;

a first diode bridge connected in series with the first and second capacitors; and

a first thyristor connected across the first diode bridge.

20. (Original) The overvoltage and overcurrent protection system of claim 19, further comprising:

a second overvoltage and overcurrent protection circuit, comprising:

a second gas discharge tube including a fourth electrode, a fifth electrode and a sixth electrode, the sixth electrode connected to the ground;

a third PTCR connected in series with the fourth electrode of the second gas discharge tube;

a third capacitor connected in parallel with the third PTCR;

a fourth PTCR connected in series with the fifth electrode of the second gas discharge tube;

a fourth capacitor connected in parallel with the fourth PTCR;

a second diode bridge connected in series with the third capacitor and the fourth capacitor; and

a second thyristor connected across the second diode bridge.

21. (Original) An overvoltage and overcurrent protection system, comprising:

a first overvoltage and overcurrent protection circuit, comprising:

a first gas discharge tube including a first electrode, a second electrode and a third electrode, the third electrode connected to a ground;

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a first PTCR connected in series with the first electrode of the first gas discharge tube;

a first capacitor connected in parallel with the first PTCR;

a second PTCR connected in series with the second electrode of the first gas discharge tube;

a second capacitor connected in parallel with the second PTCR;

a first diode bridge connected in series with the first and second capacitors; and

a first two-electrode gas discharge tube and a second two-electrode gas discharge tube connected across the first diode bridge.

22. (Original) The overvoltage and overcurrent protection system of claim 21, further comprising:

a second overvoltage and overcurrent protection circuit, comprising:

a second gas discharge tube including a fourth electrode, a fifth electrode and a sixth electrode, the sixth electrode connected to the ground;

a third PTCR connected in series with the fourth electrode of the second gas discharge tube;

a third capacitor connected in parallel with the third PTCR;

a fourth PTCR connected in series with the fifth electrode of the second gas discharge tube;

a fourth capacitor connected in parallel with the fourth PTCR;

a second diode bridge connected in series with the third capacitor and the fourth capacitor; and

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a third two-electrode gas discharge tube and a fourth two-electrode gas discharge tube connected across the second diode bridge.

23. (Original) A system for protecting networks for overvoltage and overcurrent conditions, comprising:

a first overvoltage and overcurrent protection circuit, comprising:

a first primary overvoltage protection circuit;

a first secondary overvoltage protection circuit; and

a first overcurrent protection circuit, wherein the first overcurrent protection circuit comprises a first capacitor in parallel with a first PTCR and a second capacitor in parallel with a second PTCR.

24. (Original) The system of claim 23, wherein the first primary overvoltage protection circuit comprises a gas discharge tube.

25. (Original) The system of claim 23, wherein the first secondary overvoltage protection circuit comprises a diode bridge and a first avalanche diode connected across the diode bridge.

26. (Original) The system of claim 25, further comprising a second avalanche diode connected across the diode bridge.

27. (Original) The system of claim 23, wherein the network is an Ethernet network.

28. (Original) The system of claim 23, further comprising:

a second overvoltage and overcurrent protection circuit, comprising:

a second primary overvoltage protection circuit;

a second secondary overvoltage protection circuit; and

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a second overcurrent protection circuit, wherein the second overcurrent protection circuit comprises a third capacitor in parallel with a third PTCR and a fourth capacitor in parallel with a fourth PTCR.

29. (Original) The system of claim 28, wherein the second primary overvoltage protection circuit comprises a gas discharge tube.

30. (Original) The system of claim 28, wherein the second secondary overvoltage protection circuit comprises a diode bridge and a third avalanche diode connected across the diode bridge.

31. (Original) The system of claim 30, further comprising a fourth avalanche diode connected across the diode bridge.

32. (Previously Presented) The system of claim 28, wherein the network is an Ethernet network.